

Appl. No. 10/716,794
Amdt. dated September 4, 2007
Reply to Office Action of May 1, 2007

REMARKS

Claims 1-28 are pending. Claims 4-7, 10-17, and 19-24 have been withdrawn from consideration in response to a previous restriction requirement and are thus canceled. Claims 1-3, 8, 9, 18 and 25-28 have been rejected under 35 U.S.C. §103. Claims 1-2 are provisionally rejected under 35 U.S.C. §101. Claims 3, 8-9, 18 and 25-28 are provisionally rejected on the grounds of nonstatutory obviousness-type double patenting. Claims 1, 9, and 25 are amended and new claims 29-31 have been added. Claims 1-3, 8, 9, 18 and 25-28 and new claims 29-31 remain for consideration upon entry of the present Amendment. No new matter has been added.

Amendments are proposed to claims 1, 9 and 25. Support for the amendments to claims 1, 9 and 25 is found in the original disclosure, at least at page 63, lines 14-27 and FIGS. 22-27. Thus no new matter is added.

In addition, to further recite the subject matter for which Applicant regards as the present invention, new claims 29-31 have been added. Support for new claims 29-31 is found in the original disclosure, at least at paragraphs page 52, lines 16-21; page 63, lines 14-27 and FIGS. 4 and 22-27. Thus no new matter is added.

Claims 1-3, 8-9 and 25-28 have been rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over G.B. Patent No. 2344691 to Rorison et al. (hereinafter "Rorison") in view of U.S. Patent Application Publication No. 2003/0022957 to Krohn et al. (hereinafter "Krohn").

Applicant submits that the arguments and remarks made previously are repeated and incorporated by reference herein, particularly regarding the descriptions of Rorison and Krohn.

The Examiner alleges that Rorison discloses "a method of making a polarized EL device, wherein the light active materials can be cross-linked (pg. 16, 1st full paragraph). The polarization of the light active materials can be done by selectively fixing the fluid matrix with a UV light (pg. 12, 2nd and 3rd full paragraphs)." *Office Action at page 4*. The Examiner also notes that "Rorison does not explicitly teach cross-linking a monomer from a mixture containing the monomer and the light active material." *Office Action at page 4*. The Examiner then alleges that "it is well known in the EL art to use a mixture of a monomer and a light active material in the process of making a crossed-linked EL layer (see e.g., Krohn,

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[0190]-[[0193]]” and that it would have been obvious to one of ordinary skill in the art at the time of invention to cross-link the monomer from a mixture containing a monomer and a light active material because such a mixture is suitable for the process of making a cross-linked EL layer. *Office Action at page 4.*

Rorison is merely seen to disclose a method “to cross-link the emitter materials using polarized UV light to give a uniform alignment direction.” *Rorison at page 16, first full paragraph.* Nowhere does Rorison disclose “forming chains of the light active material” as recited in amended claim 1 of the present application. In addition, Rorison discloses “molecules are oriented so that they are all aligned in a particular direction.” *Rorison at page 12 second full paragraph.* It is respectfully submitted that such an alignment of molecules is also not “forming chains of the light active material” as recited in amended claim 1. Moreover, Krohn is merely seen to disclose “a method for fabricating an electroluminescent lamp that includes a step in which an electroluminescent active layer is formed by curing a UV curable electroluminescent composition.” *Krohn abstract.* Curing a UV curable electroluminescent composition to form an electroluminescent active layer, as in Krohn, is also not the forming of chains of light active material, as recited in amended claim 1. Accordingly, neither Rorison nor Krohn individually disclose, teach, or suggest forming chains of light active material as recited in amended claim 1. Therefore, since neither Rorison nor Krohn individually disclose, teach, or suggest forming chains of light active material because both lack the forming of chains of light active material, any combination of Rorison and Krohn further fails to disclose, teach, or suggest forming chains of light active material, as recited in amended claim 1.

With regard to claim 9, the Examiner alleges that most of the recited limitations are met as per the discussion pertaining to claim 1 and states that “Rorison teaches that the light active layer 54 and a bottom electrode 52 are deposited over the substrate 51 (Fig. 9f).”

Rorison is merely seen to disclose

“a first EL emitter layer 54 is evaporated onto the alignment layer 53. The evaporation of the emitter layer 54 is carried out such that the direction of evaporation is substantially perpendicular to the substrate 50. The molecules of the emitter layer 54 will be aligned by the alignment layer 53, to be either parallel or perpendicular to the evaporation plane.” *Rorison at page 13, 3rd full paragraph.*

Similar to that stated above for claim 1, the proposed combination of Rorison and Krohn does not disclose, teach or suggest “forming chains of the OLED particulate,” as is now proposed

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in amended claim 9. Moreover, Rorison's molecules of the emitter layer are not "OLED particulate" as recited in amended claim 9.

With regard to claim 25, the Examiner alleges that most of the recited limitations are met as per the discussion pertaining to claim 1 and states that "the monomers link to one another to form a polymer. Such a reaction would necessarily cause some sort of migration of the monomers at the molecular level." However, migration of monomers at the molecular level, as proposed by the Examiner, is not "forming chains of light active material in the first region" as recited in amended claim 25. Moreover, the proposed combination of Rorison and Krohn does not disclose, teach or suggest "forming chains of light active material in the first region" as recited in amended claim 25.

If somehow Rorison and Krohn are combined as suggested by the Examiner, a point that is not admitted that one skilled in the art would do, the proposed combination would merely disclose cross-linking the emitter materials using polarized UV light to give a uniform alignment direction and molecules oriented so that they are all aligned in a particular direction (Rorison) and an electroluminescent active layer formed by curing a UV curable electroluminescent composition (Krohn).

Therefore, even if one skilled in the art would somehow combine Rorison and Krohn, a point which is not admitted, the proposed combination would not expressly or implicitly disclose, teach, or suggest the subject matter of amended claims 1, 9 or 25.

Consequently, because not all of the claim recitations are taught by Rorison and Krohn, individually and in combination, Applicant's claims 1, 9 and 25 are necessarily non-obvious, and Applicant respectfully requests reconsideration and withdrawal of the rejection of claims 1, 9 and 25.

Claims 1-3, 8-9, 18 and 25-28 have been rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over International Application Publication No. WO 2002/42832 to Broer et al. (hereinafter "Broer") in view of U.S. Patent No. 5,748,271 to Hikmet (hereinafter "Hikmet").

The Examiner alleges that Broer discloses "a method of making a liquid crystal display (LCD)" and "the liquid crystal diffuses out of the illuminated regions and the polymer diffuses into the illuminated regions." *Office Action at page 2.* The Examiner also notes that "Broer does not explicitly teach that the mixture of photo-polymerizable material and liquid

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crystal molecules comprises a light active material.” *Office Action at page 2.* To cure the deficiency of Broer, the Examiner proposes the combination of Broer and Hikmet. The Examiner then alleges that “Broer does teach that the liquid crystal material can be mixed with one or more dichroic dyes (pg. 15, lines 33-34), and Hikmet teaches that dichroic dyes can exhibit EL properties (col. 4, lines 14-25)” and that it would have been obvious to one of ordinary skill in the art at the time of invention to have used the dichroic dye of Hikmet in the liquid crystal mixture of Broer with a reasonable expectation of success. *Office Action at page 2.*

Broer is merely seen to disclose a “layer of photo-polymerizable stratified-phase-separable material 3” and “the layer 3 is patternwise irradiated with actinic radiation. Only in the illuminated regions photo-polymerization takes place and a gradient in monomer and liquid crystal molecules is set up as a result of which liquid crystal molecules diffuse out of the illuminated regions and photo-polymerizable monomers diffuse into the illuminated regions.” *Broer at paragraph extending from page 22 to page 23.* Nowhere does Broer disclose “forming chains of the light active material” as recited in amended claims 1 and 25 or “forming chains of the OLED particulate” as recited in amended claim 9 of the present application. In addition, Broer discloses “the stratified-phase-separable material is stratified to form an liquid crystal 4 and a cover layer 6.” *Broer at paragraph extending from page 22 to page 23.* It is respectfully submitted that such stratification is also not “forming chains of the light active material” as recited in amended claims 1 and 25 or “forming chains of the OLED particulate” as recited in amended claim 9. Moreover, Hikmet is merely seen to disclose dichroic dyes, the molecules of which “have a molecular longitudinal axis which is longer than an axis at right angles thereto and hence exhibit optically anisotropic behaviour. As a result of the orientation of the LC molecules, the molecules of the EL compounds will be oriented in the same direction (guest-host effect).” *Hikmet column 4 lines 18-25.* Molecules of dichroic dyes that have the axes as described in Hikmet and therefore exhibit anisotropic behavior are also not formed chains of light active material, as recited in claims 1 and 25, or chains of OLED particulate, as recited in claim 9. Accordingly, neither Broer nor Hikmet individually disclose, teach, or suggest forming chains of light active material as recited in amended claims 1 and 25 or forming chains of OLED particulate as recited in amended claim 9. Therefore, since neither Broer nor Hikmet individually disclose, teach, or suggest forming chains of light active material because both lack the forming of

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chains of light active material, any combination of Broer nor Hikmet further fails to disclose, teach, or suggest forming chains of light active material, as recited in amended claims 1 and 25. Additionally, since neither Broer nor Hikmet individually disclose, teach, or suggest forming chains of light active material because both lack the forming of chains of OLED particulate; any combination of Broer nor Hikmet also fails to disclose, teach, or suggest forming chains of OLED particulate, as recited in amended claim 9.

If somehow Broer and Hikmet are combined as suggested by the Examiner, a point that is not admitted that one skilled in the art would do, the proposed combination would merely disclose a stratified-phase-separable material stratified to form a liquid crystal and a cover layer (Broer) and dichroic dye molecules which have a molecular longitudinal axis which is longer than an axis at right angles thereto (Hikmet).

Therefore, even if one skilled in the art would somehow combine Broer and Hikmet, a point which is not admitted, the proposed combination would not expressly or implicitly disclose, teach, or suggest the subject matter of amended claims 1, 9 or 25.

Consequently, because not all of the claim recitations are taught by Broer and Hikmet, individually and in combination, Applicant's claims 1, 9 and 25 are necessarily non-obvious, and Applicant respectfully requests reconsideration and withdrawal of the rejection of claims 1, 9 and 25.

Claims 1-3, 8-9, 18 and 25-28 have been rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 6,304,309 to Yamanaka et al. (hereinafter "Yamanaka") in view of Hikmet.

The Examiner alleges that Yamanaka discloses "a method of making an LCD" and "a mixture of polymer precursor and a liquid crystal material is applied over a bottom electrode 9. The mixture is selectively irradiated with UV light through openings 9a and 5a. As a result of the light exposure, the precursor diffuses into the UV light and polymerizes to form supporting members 31." *Office Action at page 3*. The Examiner also notes that "Yamanaka does not explicitly teach that the mixture of polymer precursor and a liquid crystal material comprises a light active material." *Office Action at page 3*. The Examiner then alleges that "Yamanaka teaches that a dichroic dye can be added to liquid crystal mixture and "Hikmet teaches the obviousness of using a dichroic dye having EL properties." *Office Action at page 3*.

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Yamanaka is merely seen to disclose a "guest host liquid crystal and a polymer precursor" wherein "the polymer precursor is condensed by the diffusion due to the unevenness of the concentration, and hardened as a polymer above the openings 9a and 5a so as to form the supporting members 31." Yamanaka *column 63 lines 1-30*. Nowhere does Yamanaka disclose "forming chains of the light active material" as recited in amended claims 1 and 25 or "forming chains of the OLED particulate" as recited in amended claim 9 of the present application. In addition, Yamanaka discloses "the guest host liquid crystal left after the polymer precursor is used for the formation of the supporting members 31 is exclusively sealed into between the substrate 1 and the sealing plate 11, so as to form the liquid crystal layer 41." Yamanaka *column 63 lines 1-30*. It is respectfully submitted that such liquid crystal left after formation of the supporting members is also not "forming chains of the light active material" as recited in amended claims 1 and 25 or "forming chains of the OLED particulate" as recited in amended claim 9. As mentioned above, Hikmet is merely seen to disclose dichroic dyes, the molecules of which "have a molecular longitudinal axis which is longer than an axis at right angles thereto and hence exhibit optically anisotropic behaviour. As a result of the orientation of the LC molecules, the molecules of the EL compounds will be oriented in the same direction (guest-host effect)." Hikmet *column 4 lines 18-25*. Accordingly, Yamanaka and Hikmet, individually or in combination, does not disclose, teach, or suggest the forming of chains of light active material as recited in claims 1 and 25 or the forming of chains of OLED particulate as recited in claim 9.

If somehow Yamanaka and Hikmet are combined as suggested by the Examiner, a point that is not admitted that one skilled in the art would do, the proposed combination would merely disclose a polymer precursor used for the formation of supporting members (Yamanaka) and dichroic dye molecules which have a molecular longitudinal axis which is longer than an axis at right angles thereto (Hikmet).

Therefore, even if one skilled in the art would somehow combine Yamanaka and Hikmet, a point which is not admitted, the proposed combination would not expressly or implicitly disclose, teach, or suggest the subject matter of amended claims 1, 9 or 25.

Consequently, because not all of the claim recitations are taught by Yamanaka and Hikmet, individually and in combination, Applicant's claims 1, 9 and 25 are necessarily non-

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obvious, and Applicant respectfully requests reconsideration and withdrawal of the rejection of claims 1, 9 and 25.

Claim 18 has been rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Rorison in view of Krohn and in further view of U.S. Patent Application Publication No. 2001/0050746 to Song (hereinafter "Song"). As mentioned above, the proposed combination of Rorison and Krohn would not expressly or implicitly disclose, teach, or suggest the subject matter of amended claim 9. Song is merely seen to disclose "a liquid crystal layer made of liquid crystal material that is injected between the first and second substrates." Song does not cure the deficiencies in Rorison and Krohn. Therefore, even if one skilled in the art would somehow combine Rorison, Krohn, and Song a point which is not admitted, the proposed combination would not expressly or implicitly disclose, teach, or suggest the subject matter of amended claim 18.

Because claims 2, 3, 8, 18, 26-28 depend from either claim 1, 9 or 25 and because claims 1, 9 and 25 are asserted to be non-obvious for the reasons presented above, claims 2, 3, 8, 18, 26-28 are necessarily non-obvious. Applicant, therefore, submits that claims 2, 3, 8, 18, 26-28 are allowable. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection of claims, 2, 3, 8, 18, 26-28.

In the Office Action, the Examiner provisionally rejects claims 1 and 2 under 35 U.S.C. § 101 alleging statutory type double patenting. In support of the provisional rejection the Examiner alleges that claims 1 and 2 of the present application claims the same invention as that of claims 1 and 2 of copending Application No. 11/453627.

As mentioned above, claim 1 has been amended to further recite the subject matter for which Applicant regards as the present invention. Accordingly, amended claim 1 and claim 2 depending therefrom do not claim the same invention as that of claims 1 and 2 of copending Application No. 11/453627. Therefore, Applicant respectfully requests reconsideration and withdrawal of the 35 U.S.C. § 101 statutory type double patenting provisional rejection.

In addition, the Examiner provisionally rejects claims 3, 8-9, 18 and 25-28 on the grounds of nonstatutory obviousness-type double patenting as allegedly being unpatentable over claims 3-7 of copending Application No. 11/453627 in view of Rorison. As mentioned above claims 1, 9 and 25 have been amended to further recite the subject matter for which Applicant regards as the present invention. In addition, based on the arguments presented

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above, claims 1, 9 and 25 are deemed non-obvious because not all of the claim recitations are taught by Rorison and Krohn, individually and in combination. Moreover, as stated above, claims 3, 8, 18 and 26-28 depend from either claim 1, 9 or 25 and are therefore also non-obvious. Therefore, Applicant respectfully requests reconsideration and withdrawal of the nonstatutory obviousness-type double patenting provisional rejection of claims 3, 8-9, 18 and 25-28.

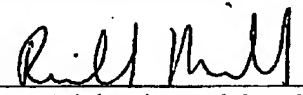
As noted above, new claims 29-31 have been added which depend from, either directly or indirectly, and further limit claim 1, respectively. At least for the reasons presented above, claims 29-31 are deemed allowable. In addition, none of the cited references disclose, teach or suggest that "the light active material comprises electrostatically active microcapsules comprising an OLED material encapsulated within a polymer shell," as recited in new claim 29. It is respectfully submitted that, at least in view of the arguments of record, the newly added claims are patentable over the cited documents.

Applicant believes that the foregoing amendments and remarks are fully responsive to the Office Action and that the claims herein are allowable. An early action to that effect is earnestly solicited.

If the Examiner believes that a telephone conference with Applicant's attorneys would be advantageous to the disposition of this case, the Examiner is invited to telephone the undersigned.

Please charge the \$60.00 fee for a one-month extension of time to Deposit Account No. 503342 maintained by Applicant's attorneys. Applicant believes that no additional fees are due with the submission of this Amendment; however, if additional fees are due, please charge the mentioned Deposit Account.

Respectfully submitted,

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